

# Geometry 8.3 Notes: Similar Polygons

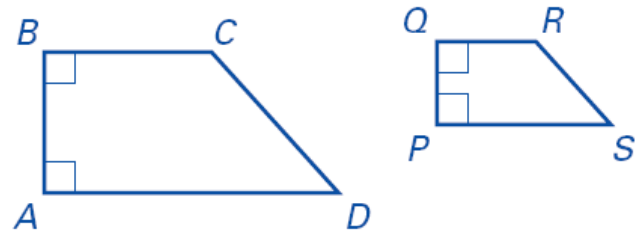
(pp 473-475)

## Similar Polygons:

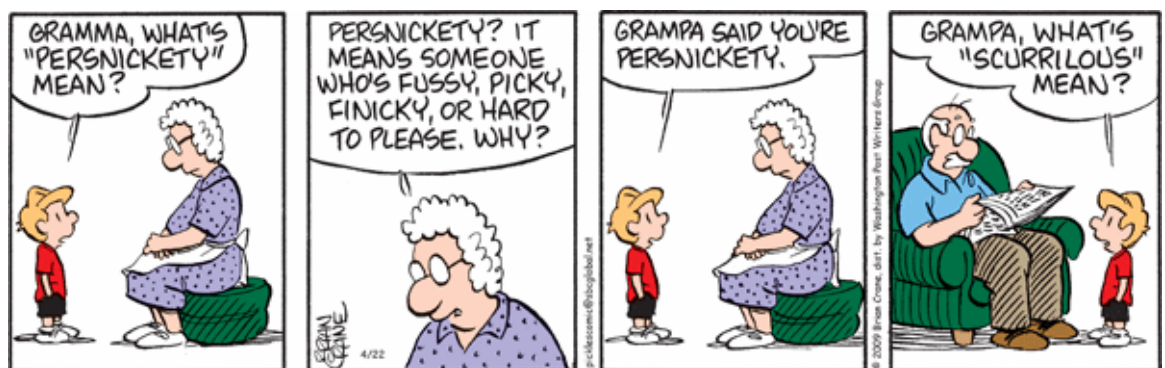
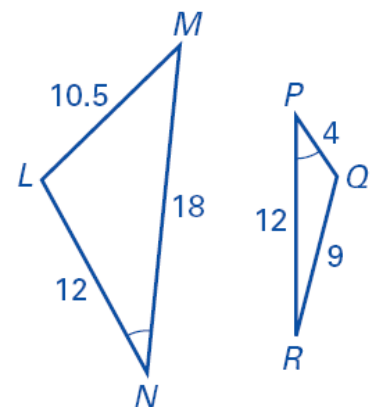
### Symbol for similar:

### Examples.

1. Trapezoid  $ABCD$  is similar to trapezoid  $PQRS$ . List all the pairs of congruent angles, and write the ratios of the corresponding sides in a statement of proportionality.



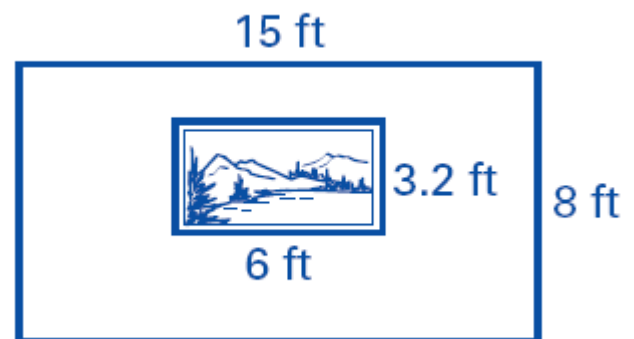
2. Decide whether the figures are similar. If they are, write the similarity statement.



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3. You have a photo 4 in. wide by 6 in. long that you want to reduce to fit in a frame that is 1.5 in. wide. How long will the reduced photo be?

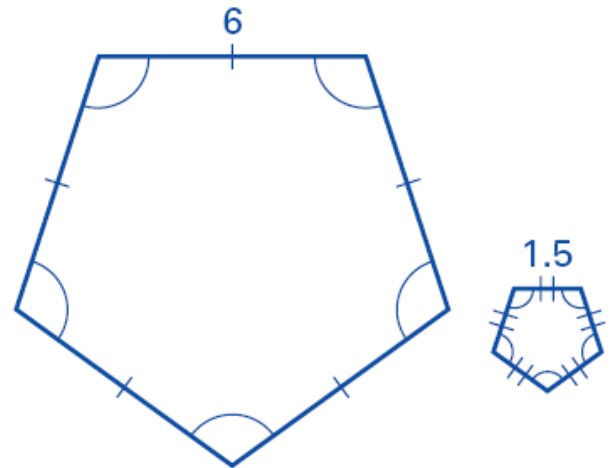
4. A painting is similar to the wall on which it is hanging. Calculate the scale factor of the wall to the painting and find the ratio of their perimeters.



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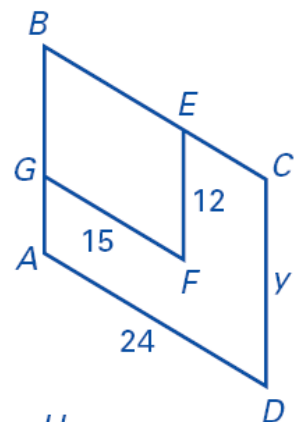
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5. Guided Practice: Verify that these two pentagons are similar. Then find the ratio of their perimeters.



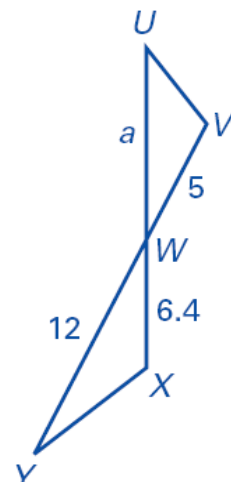
Ratios of the Perimeters:

6. Example: Parallelogram  $ABCD$  is similar to parallelogram  $GBEF$ . Find the value of  $y$ .



Guided Practice.

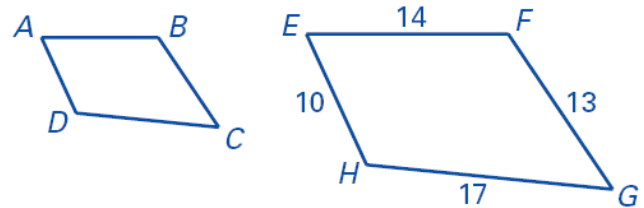
7.  $\triangle UVW \sim \triangle YXW$ . Find the value of  $a$ .



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8. \_\_\_\_  $ABCD \sim EFGH$ . The perimeter of  $ABCD$  is 36. What is the length of  $BC$ ?

- A.  $6\frac{2}{3}$
- B.  $8\frac{2}{3}$
- C.  $11\frac{1}{3}$
- D. 15
- E. 19.5



9. How are the perimeters of similar polygons related?
10. If two polygons are similar, must they be congruent?

